BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Foundation Diploma in Engineering Pearson BTEC International Level 3 Diploma in Engineering Pearson BTEC International Level 3 Diploma in Electrical and Electronic Engineering Pearson BTEC International Level 3 Diploma in Mechanical Engineering Pearson BTEC International Level 3 Diploma in Digital Engineering Pearson BTEC International Level 3 Diploma in Manufacturing Engineering Pearson BTEC International Level 3 Extended Diploma in Engineering Pearson BTEC International Level 3 Extended Diploma in Electrical and Electronic Engineering Pearson BTEC International Level 3 Extended Diploma in Mechanical Engineering Pearson BTEC International Level 3 Extended Diploma in Digital Engineering Pearson BTEC International Level 3 Extended Diploma in Manufacturing Engineering
Unit number and title	**Unit 24: Maintenance of mechanical Systems**
Learning aim(s)	**D:** Carry out routine maintenance safely and sustainably to help ensure the continued operation of a mechanical system
Assignment title	Routine Maintenance
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	You are a second year apprentice at a large manufacturing company. The manager of the Maintenance Department has decided that there needs to be a procedure for every

	routine maintenance task that can be followed by the person performing that task. Where there is already one then it has to be reviewed and refined if necessary and where there isn't one then one needs to be created. At all times the procedure must emphasise the proper application of all health and safety procedures that are applicable for the task being performed. You have been asked by your supervisor to perform two routine maintenance tasks and to review and refine the procedure that is applicable for the task or to produce a procedure if one does not exist. You are to be supervised in this task by your supervisor.
Task 1	You are to perform two routine maintenance tasks whilst being supervised by your immediate line manager. For each of the tasks you are required to follow an existing procedure and you are to follow the procedure carefully but to refine it as you follow it, making additions or adjustments as you progress through it, through to the proper completion of the tasks and having fully complied with all of the health and safety considerations. The refinements you make will need to be explained in detail. You are being assessed on your ability to properly perform the required tasks through to a proper conclusion, the handover of the mechanism to the department in which it belongs and having completed the task with the full H&S requirement. You are expected to: 1. Make notes as you progress through the procedures and at the end of the assessment to have refined or produced new procedures for the two tasks. The completed procedures must be accurate, be efficient, to take account of sustainability requirements, say how the completed work must be inspected at significant stages and to explain the need for every H&S action. 2. To assess the work area before you start and secure it properly, tapping the area off and by displaying suitable signage before you start. 3. By isolating the machine both mechanically and electrically. 4. By having with you in the area the necessary tooling. 5. You are expected to source a suitable replacement part "sustainably" by ensuring that you obtain the eco-friendly replacement part possible and by disposing of the removed part in a "sustainable" way which should be available from the supplier. You will need to justify your

	choice of the replacement within your procedure. 6. You are expected to undertake the task entirely on your own wearing appropriate PPE and whilst being supervised. You will undertake the necessary preparation to replace the part, to replace the part, to restore the system to the working condition and then to test it. 7. You are then expected to "hand-over" the mechanism and the work area in which it operates by removing all of the tape and signage that has been used to secure the area. The two tasks that you are required to complete are to: 1. Replace a drive belt on a small milling machine in the toolroom, 2. To clean the coolant tank and mechanism in a small lathe in the toolroom by fully dismantling the tank, removing the pump and properly cleaning it, replacing any parts that require replacing, removing the tank and cleaning it. Then replacing everything, leaving a clean and fully functioning coolant system for the machine.
Checklist of evidence required	Two completed procedures that include an explanation of the safe working practices that apply to each stage of the procedures. Two completed observation records that detail what was done and to affirm that the tasks were completed properly, successfully and within the H&S requirements for the two tasks. Two completed replacements and fully functioning mechanisms.

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
24/D.D3	Refine, while using the correct process, two routine maintenance tasks on a mechanical system safely, sustainably, accurately and efficiently, explaining the safe working practices that apply and inspecting the work.
24/D.M4	Complete two routine maintenance tasks, using the correct process, on a mechanical system safely, sustainably and accurately, explaining the safe working practices that apply and inspecting the work.
24/D.P5	Explain what safe working practices apply when performing two routine maintenance tasks.
24/D.P6	Complete two routine maintenance tasks, using the correct process, on a mechanical system safely, and sustainably while inspecting the work.

Sources of information to support you with this Assignment	**Textbooks** Kibble, R, T., Mechanical Systems for Industrial Maintenance, Prentice Hall, ISBM 978-0130164902, 2001. Jeffrey, D., Principles of Machine Operation and Maintenance, Routledge, ISBN 978-0-7506-0293-8, 2011 Mobley, K., Maintenance Fundamentals, Elsevier Butterworth-Heinemann, ISBN 0-7506-7798-8, 2004. Mobley, K. (ed), Maintenance Engineering Handbook, McGraw-Hill, ISBN 978-0-07-182664-8, 2014 Shine, B., Maintenance & Facilities Management, Original Writing Ltd, ISBN 978-1-908282-51-4, 2011. **Websites** Theengineeringtoolbox.com This is a general web site for engineering and is very useful. The site is American so the spelling of words will not be "English" in some cases. The site can be searched and it contains material on the majority of topics at all levels. The internet will be a good resource generally for this subject ranging from data available from suppliers to specific information available from educational organisations. Care must be exercised in respect of the suitability. **Above are some examples of websites. Further useful resources may be found at** http://qualifications.pearson.com/en/support/published-resources.html#step1
Other assessment materials attached to this Assignment Brief	*eg, work sheets, risk assessments, case study*

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